

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

Cancel claims 1-3

4. (Currently Amended) A security administration server ~~as claimed in claim 3, wherein~~ installed in a predetermined LAN, comprising:

means for collecting information relating to communication conducted via said LAN by a device to be monitored operating in said LAN;

means for generating an image by extracting information useful for security management in said LAN from said collected communication related information and visualizing said information to a predetermined form;

means for sending said image to a monitoring device wherein:

said LAN is connected to an external network such as the Internet; and

said image generating means comprises means for generating an image visualizing into respective predetermined objects simultaneously, said device to be monitored, a device operating in said external network which communicates with said device to be monitored, a user using said devices, and communication conducted between ~~each device~~ said devices inside and outside of said LAN.

5. (Currently Amended) A security administration server as claimed in claim 4, wherein

said image generating means comprises means for dividing in groups ~~each of~~ said objects according to predetermined standards, and for generating an image visualizing each group in layers.

6. (Currently Amended) A security administration server as claimed in claim ~~[[5]]~~ 4, wherein said standard is based on reliability between each device and said LAN.

7. (Previously Presented) A security administration server as claimed in claim 6, wherein:

said image generating means comprises a function for generating an image structured with an area displaying a text message as it is, an area displaying as a graph an appearance frequency of a predetermined character string in said log information, an area displaying as a graph an appearance frequency of said character string for each predetermined unit time period in a time series, and an area displaying as a graph the length of each line of said text message, based on a log information structured with describing various processes conducted in each of said devices to be monitored in a text message format including such content and execution time and date in separate lines.

8. (Previously Presented) A security administration server as claimed in claim 7, wherein

said device to be monitored comprises:

means for managing a log file which is the entity of the log information in the form of an original file and a plurality of duplicate files thereof managed with the same contents as said original file in real time, and for storing and managing each file distributed to a plurality of storing places suitably defined in a storing means in said device to be monitored;

means for suitably transferring each duplicate file to another said storing place;

means for detecting whether or not there is an abnormality in security in both of said original and duplicate log files; and

means for notifying said security administration server when an abnormality is detected of such fact and/or its content;

wherein said image generating means comprises means for reflecting in said image a fact and/or its content of detecting said abnormality notified from said device to be monitored.

9. (Previously Presented) A security administration sever as claimed in claim 8, comprising:

means for receiving an updating data sent from a predetermined computer operating in said external network; and

means for updating a content of a software providing said image generating means by said updating data.

10. (Previously Presented) A security administration server as claimed in claim 9, comprising means for transmitting and receiving said collected log information to and from said computer by communicating with said predetermined computer operating in said external network.

11. (Previously Presented) A security administration server as claimed in claim 10, comprising:

means for storing and managing various setting-registration information such as information of said device to be monitored from which said log information is collected, and information used and/or referred to by said image generating means; and

means for transmitting and receiving said setting-registration information to and from said computer by communicating with said predetermined computer operating in said external network.

12. (Previously Presented) A security administration server as claimed in claim 11, comprising:

means for detecting an abnormality in security of said device to be monitored or said security administration server itself, by communicating with a predetermined computer operating in said external network, based on said collected log information and log information of said security administration server stored and managed by itself; and

means for transmitting and receiving to and from said computer when an abnormality is detected of such fact and/or its content.

13. (Previously Presented) A security administration server as claimed in claim 12, comprising:

means for communicating based on a TCP/IP protocol with each device to be monitored;

means for allocating predetermined IP addresses according to a request from each device to be monitored in said LAN as well as for storing and managing allocated histories describing histories of corresponding said IP addresses and MAC addresses of each device to be monitored;

means for storing and managing said collected communication related information attached with an IP address specifying which said device to be monitored said communication related information concerns;

means for handling said communication related information attached with IP addresses corresponded to a same MAC address in said allocated history, as a communication related information regarding the same said device to be monitored.

14. (Currently Amended) A security administration server as claimed in claim 13, comprising:

means for mutually transmitting and ~~receive~~receiving said allocated history to and from other security administration servers operating in said LAN; and

means for integratedly managing said allocated history in another security administration server that is received, and said allocated history stored and managed by said server itself, and to handle said communication related information attached with IP

addresses corresponding to a same MAC address in respect to these allocated histories, as a communication related information regarding the same device to be monitored.

15. (Currently Amended) A security administration server as claimed in claim [[13 or]] 14, comprising means for specifying a MAC address wherein each combination of a MAC address and an IP address described corresponding to said allocated history is attached with a valid period information of said IP address, said valid period information and a generated time and date of said communication related information recorded and attached to said collected communication related information are compared, and a MAC address corresponding to an IP address attached to said communication related information at said generated time and date is specified.

16. (Original) A host server functioning as said predetermined computer in claim 9, comprising means for suitably sending said updating data to said security administration server.

17. (Original) A host server functioning as said predetermined computer in claim 10, comprising means for storing and managing said communication related information sent from said security administration server.

18. (Original) A host server as claimed in claim 17, comprising means for sending said communication related information which is stored and managed to said security administration server.

19. (Currently Amended) A host server as claimed in claim [[17 or]] 18, comprising:

means for detecting an abnormality in security regarding said device to be monitored based on said communication related information which is stored and managed; and

means for sending to a security administration server installed in a relevant LAN of the fact and/or its content when an abnormality is detected.

20. (Previously Presented) A host server as claimed in claim 19, comprising means for receiving said various setting information sent from said security administration server, or the fact and/or its content of detecting said abnormality and for storing and managing such information.

21. (Previously Presented) A host server as claimed in claim 20, comprising:
means for communicating with a portable telephone via the Internet or a telephone network; and

means for reporting to a predetermined portable telephone by a voice call or an electronic mail, of the fact and/or its content when the host server itself detects an

abnormality, or the fact and/or its content of detecting said abnormality sent from said security administration server.

22. (Previously Presented) A host server as claimed in claim 21, comprising:
means for communicating with a portable telephone via the Internet;
means for receiving an inquiry message regarding said communication related information sent from a predetermined portable telephone;
means for retrieving said communication related information corresponding to said inquiry message from said communication related information which is stored and managed; and
means for sending a message described with such retrieved result to said portable telephone.

23. (Previously Presented) A host server as claimed in claim 22 comprising:
means for communicating with a portable telephone via the Internet;
means for receiving information specifying said device to be monitored sent from a predetermined portable telephone and a processing command executed in said device;
means for sending said processing command to a device specified by said specifying information via the Internet;
means for receiving an execution result of said processing command sent from said device, for editing said execution result to an image of a form suitable for a user

interface of said portable telephone, and for sending such image to said portable telephone.

24. (Previously Presented) A security administration server as claimed in claim 23, comprising means for collecting communication packets, wherein said communication related information is communication packets flowing in said LAN.

25. (Original) A security administration server as claimed in claim 24, comprising means for directly obtaining said communication packets via said LAN.

26. (Currently Amended) A security administration server as claimed in claim [[24 or]] 25, comprising means for concentrating via said LAN communication packets which are obtained by said device to be monitored operating in said LAN and stored and managed in said device to be monitored.

27. (Previously Presented) A security administration server as claimed in claim 26, comprising:

means for calculating at least one portion of a value of the number of said devices to be monitored or a number totaling the number of devices into predetermined groups, a number of communication packets transmitted and received by said device to be monitored via said LAN, and a number totaling such number of communication packets in predetermined groups; and

means for generating an image visually expressing a value of at least one portion of each calculated value and for sending said image to said device to be monitored which is connected to via said LAN.

28. (Previously Presented) A security administration server as claimed in claim 27, comprising:

means for storing and managing access-limitation information in respect to said device to be monitored;

means for monitoring unauthorized access violating said access-limitation information based on said communication packets; and

means for generating an image visually expressing the effect when recognizing said unauthorized access and sending said image to said monitor device.

29. (Previously Presented) A security administration server as claimed in claim 28, comprising:

means for storing and managing access authorization information for each system operating in said device to be monitored;

means for monitoring unauthorized access violating said access authorization information based on said communication packets;

means for generating an image expressing the fact of when an access violating said access authorization information is recognized; and

means for sending said image to said monitoring device.

30. (Previously Presented) A security administration server as claimed in claim 29, comprising means:

for generating an image by drawing an image visualizing communication conducted between each of said devices to be monitored or an access situation of a user of each device to be monitored based on said communication packets and an access situation from each device to be monitored or a user to a database operating in each device to be monitored, as overlapping an image where an abstract design of each device operating in said LAN is disposed to form according to an actual arrangement state of each device; and

for sending said image to said monitoring device.

31. (Previously Presented) A security administration server as claimed in claim 30, comprising means for detecting a use history of said device to be monitored of each user using said device to be monitored based on said communication packets and sending an image describing said use history to said monitoring device.

32. (Previously Presented) A security administration server as claimed in claim 31, comprising:

means for totaling the number of communication packets transmitted and received to and from said device to be monitored which is examined based on said communication packets, for each system operating in said device to be monitored;

means for generating an image visualizing said totaled value for each system;
and

means for sending said image to said monitor device.

33. (Previously Presented) A security administration server as claimed in claim 32, comprising:

means for examining an operating state of said device to be monitored based on said communication packets;

means for generating an image visualizing an operating state of each device to be monitored by classifying into each system operated by using said device to be monitored; and

means for sending said image to said monitoring device.

34. (Previously Presented) A security administration server as claimed in claim 33, comprising:

means for detecting an access frequency to a database operated by said device to be monitored based on said communication packets;

means for generating an image visualizing by classifying for each device to be monitored or for each system operated by using said device to be monitored; and

means for sending said image to monitoring device.

35. (Previously Presented) A security administration server as claimed in claim 34, comprising:

means for collecting via the LAN execution histories of a program in said device to be monitored which is accumulated and recorded in said device to be monitored;

means for generating an image visualizing an execution history of a program in said device to be monitored based on said execution history; and

means for sending said image to said monitoring device.

Cancel claims 36 and 37.

38. (Currently Amended) A security administration server ~~as claimed in claim 36 or 37~~, installed in a LAN connected to an external network such as the Internet, comprising:

means for passively or actively collecting log information stored and managed by a device operating in said LAN;

means for generating an image visualizing information to a predetermined form, where said information is extracted as useful for security management in said LAN from said collected log information;

means for passively or actively sending said image to another device via said LAN;

wherein said image generating means comprises means for generating an image visualizing as respective predetermined objects, said device operating in said LAN, a device operating in said external network communicating with said device, a user using both said devices, and communication conducted between each device inside and outside of said LAN.

39. (Original) A security administration server as claimed in claim 38 wherein said image generating means comprises means for dividing each object into groups according to a predetermined standard, and generate an image visualizing each group in layers.

40. (Original) A security administration server as claimed in claim 39, wherein said standard is based on reliability between various devices and said LAN.

41. (Previously Presented) A security administration server as claimed in claim 40, wherein:

said image generating means comprises a function for generating an image structured with an area displaying a text message as it is, an area displaying as a graph an appearance frequency of a predetermined character string in said log information, an area displaying as a graph an appearance frequency of said character string for each predetermined unit time period in a time series, and an area displaying as a graph the length of each line of said text message, based on a log information structured with various processes conducted in each device described in separate lines in a text message format including such content and executing time and date.

42. (Previously Presented) A security administration server as claimed in claim 41, wherein

said device operating in said LAN comprises:

means for managing a log file which is the entirety of the log information in the form of an original file and a plurality of duplicate files thereof managed with the same contents as said original file in real time; and

means for storing and managing each file distributed to a plurality of storing places suitable defined in a storing means in said device;

means for suitably transferring each duplicate file to another storing place;

means for detecting whether or not there is an abnormality in security in both of said original and duplicate log files; and

wherein image generating means comprises means for reflecting in said image the fact an/or its content of detection of said abnormality notified from said device.

43. (Previously Presented) A security administration server as claimed in claim 42, comprising:

means for receiving an updating data sent from a predetermined computer operating in said external network; and

means for updating a content of a software providing said image generating means by said updating data.

44. (Previously Presented) A security administration server as claimed in claim 43, comprising means for transmitting and receiving actively or passively said collected log information to and from said computer by communicating with a predetermined computer operating in said external network.

45. (Previously Presented) A security administration server as claimed in claim 44, comprising:

means for storing and managing various setting-registration information such as information regarding said device operating in said LAN which is to be an object of collecting said log information and information used and referred to by said image generating means; and

means for transmitting and receiving said setting-registration information actively or passively to and from said computer by communicating with a predetermined computer operating in said external network.

46. (Previously Presented) A security administration server as claimed in claim 45, comprising:

means for detecting an abnormality in security of said device or said security administration server itself by communicating with a predetermined computer operating in said external network, based on said collected log information and a log information of said security administration server stored and managed by itself; and

means for transmitting and receiving actively or passively to and from said computer the fact and/or its content when an abnormality is detected.

47. (Previously Presented) A security administration server as claimed in claim 46, comprising:

means for communicating based on a TCP/IP protocol with each device in said LAN;

means for allocating predetermined IP addresses according to a request from said device in said LAN as well as for storing and managing allocated histories describing histories of corresponding said IP addresses and MAC addresses of said devices;

means for storing and managing said collected log information by attaching an IP address specifying which device said log information concerns;

means for handling said log information attached with IP addresses corresponded to a same MAC address in said allocated history, as log information regarding the same device.

48. (Original) A security administration server as claimed in claim 47, comprising:

means for mutually transmitting and receive said allocated history to and from another security administration server operating in said LAN; and

means for integratedly managing said receives allocated history in another security administration server, and said allocated history stored and managed by itself, and for handling said log information attached with IP addresses corresponding to a same MAC address in respect to said allocated histories, as a log information regarding the same device.

49. (Currently Amended) A security administration server as claimed in claim [[47 or]] 48 comprising means for specifying a MAC address wherein each combination of MAC address and an IP address described corresponding to said allocated history is

attached with a valid period information of said IP address, said valid period information and a generated time and date of said log information recorded attached to said collected log information are compared, and a MAC address corresponded with an IP address attached to said log information at said generated time and date is specified.

50. (Original) A host server functioning as said predetermined computer in claim 43, comprising means for suitably sending said updating data to said security administration server.

51. (Original) A host server functioning as said predetermined computer in claim 44, comprising means for storing and managing said log information sent from said security administration server.

52. (Original) A host server as claimed in claim 51, comprising means for sending actively or passively said log information which is stored and managed to said security administration server.

53. (Currently Amended) A host server as claimed in claim [[51 or]] 52, comprising:

means for detecting an abnormality in security of said device in said LAN based on said log information which is stored and managed; and

means for sending to a security administration server installed in a relevant LAN the fact and/or its content when an abnormality is detected.

54. (Previously Presented) A host server as claimed in claim 53, comprising means for actively or passively receiving said various setting information sent from said security administration server or the fact and/or its content of detecting said abnormality and for storing and managing such information.

55. (Previously Presented) A host server as claimed in claim 54, comprising:
means for communicating with a portable telephone via the Internet or a telephone network; and

means for reporting to a predetermined portable telephone by a voice call or an electronic mail, the fact and/or its content when the host server itself detects an abnormality or the fact and/or its content of detecting said abnormality sent from said security administration server.

56. (Previously Presented) A host server as claimed in claim 55, comprising:
means for communicating with a portable telephone via the Internet;
means for receiving an inquiry information regarding said log information sent from a predetermined portable telephone;
means for retrieving said log information corresponding to said inquiry message from said log information which is stored and managed; and
means for sending a message describing said retrieved result to said portable telephone.

57. (Previously Presented) A host server as claimed in claim 56, comprising:
means for communicating with a portable telephone via the Internet;
means for receiving information specifying said device operating in said LAN sent from a predetermined portable telephone and a processing command executed in said device;
means for sending said processing command to a device specified by said specifying information via the Internet;
means for receiving an execution result of said processing command sent from said device for editing said execution result to an image of a form suitable for a user interface of said portable telephone and for sending such image to said portable telephone.

58. (New) A security administration server as claimed in claim 4, comprising:
means for detecting an abnormality in security of said device to be monitored based on said communication related information, and
means for making said image reflect information to that effect and/or its content when the abnormality is detected.

59. (New) A security administration server as claimed in claim 4, comprising
means for collecting log information via said LAN, wherein said communication related information is log information stored and managed in said device to be monitored.

60. (New) A security administration server as claimed in claim 38 comprising:
means for detecting an abnormality in security of a device operating in said LAN
based on said collected log information; and
means for making said image reflect information to that effect and/or its content
when the abnormality is detected.